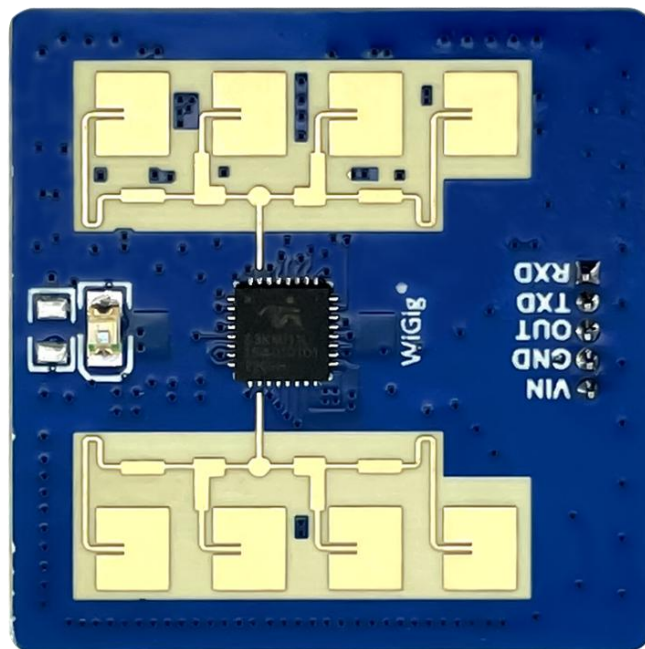![Hi-Link logo]

Shenzhen Hi-Link Electronic Co.,Ltd

HLK- LD2411
Gesture Recognition Module
User Manual

1.Product Description

The LD2411 is a human distance sensing and gesture recognition module. it can recognise the user's gesture lifting and releasing movements, as well as detecting the user's movement into and away from the toilet, and outputting GPIO signals through the detected movements to allow the manufacturer's microcontroller to control the opening or closing of the toilet lid.

The module uses a 5V supply and the radar beam is designed in a wide and narrow way, with a horizontal angle (4 patch) of approximately ±20° and a vertical angle of ±40°, with adjustments made to the antenna placement direction depending on the scenario. For toilet applications, a narrow horizontal beam is recommended to avoid false triggering of the human body passing by.

2.Product Features and Benefits

- Plug and play, easy assembly method

- Sensing distance up to 2 metres, gesture recognition distance up to 1 metre

- Detection angle coverage up to ±30 degrees

- Distance sensing distance can be adjusted via Bluetooth

- The ultimate value for money choice
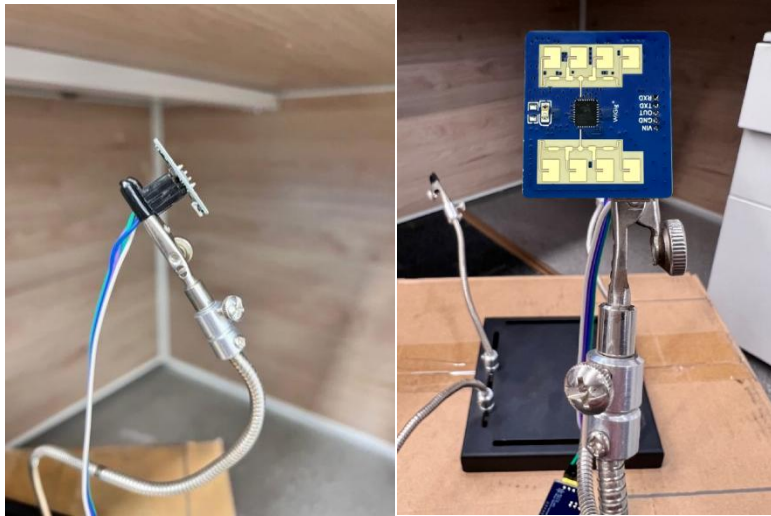
3.Installation Method

Placement Direction:

When installing the antenna, the antenna should be oriented horizontally in the 4 patch direction as shown in the diagram below, and placed at an angle as normal as possible.
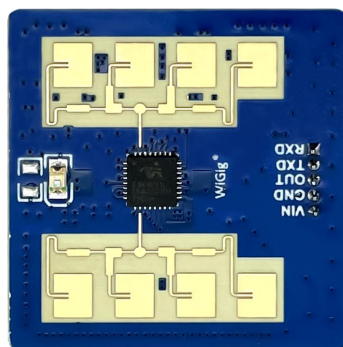
Placement:

45 cm above the horizontal with a radar placement angle of 45°


4.How to Use

Use of Gesture Recognition:

With the module as the centre, the person stands facing the radar and the hand drops naturally before swinging. Swing with palm up and open palm, lift arm to 45 degrees diagonally upwards in a normal direction, and then keeping the palm up the arm falls back naturally, swinging once from bottom to top and then again from top to bottom.
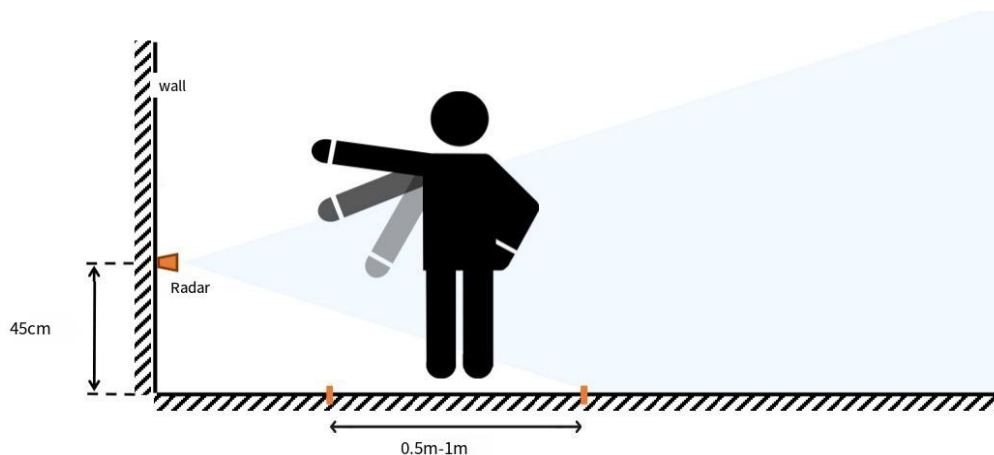
Note 1: Top to bottom and then bottom to top for a complete movement to be recognised

Note 2: Hand gestures are required at a distance of 0.5 to 1m
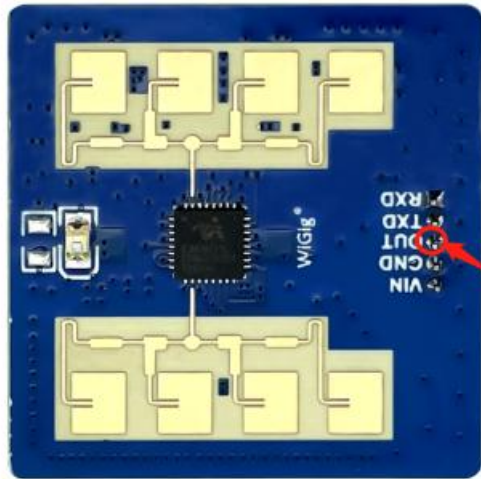
When a gesture is recognised, the OUT pin of the module will output a high level for about 1~2s or so. It is necessary to wait for 1~2s before the next set of gestures can be recognised.

Distance Sensing Use:

Walk in: with the module as the centre, the human body facing the module, walk to reach the lower threshold setting distance, RX pin output high level, TX low level, lasting about 1~2s

Away: The body faces the module and walks backwards, after reaching the upper threshold setting distance, the TX pin outputs a high level and the RX low level for about 1~2s
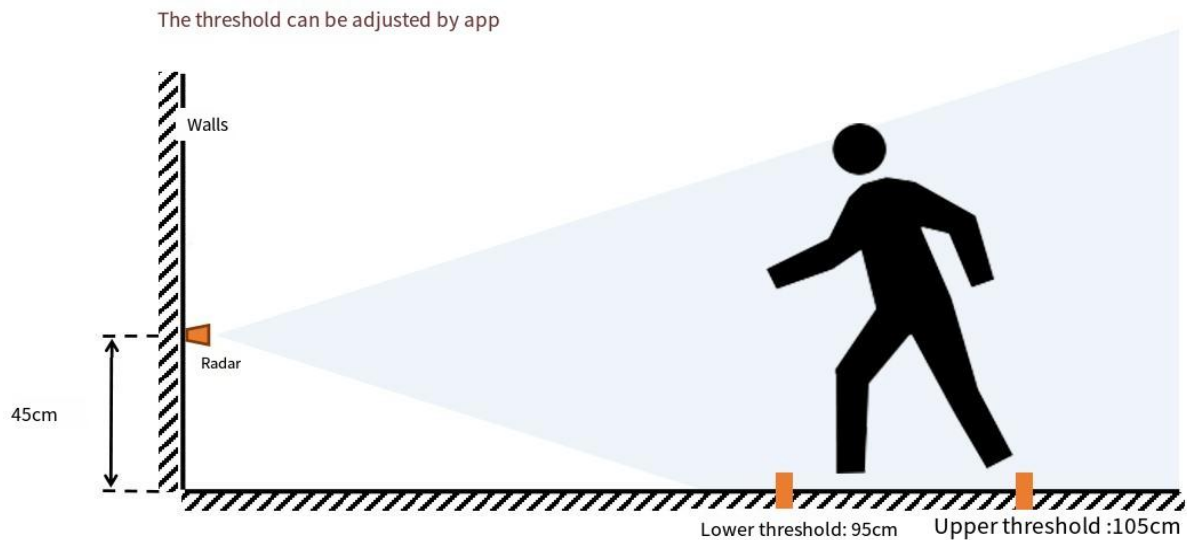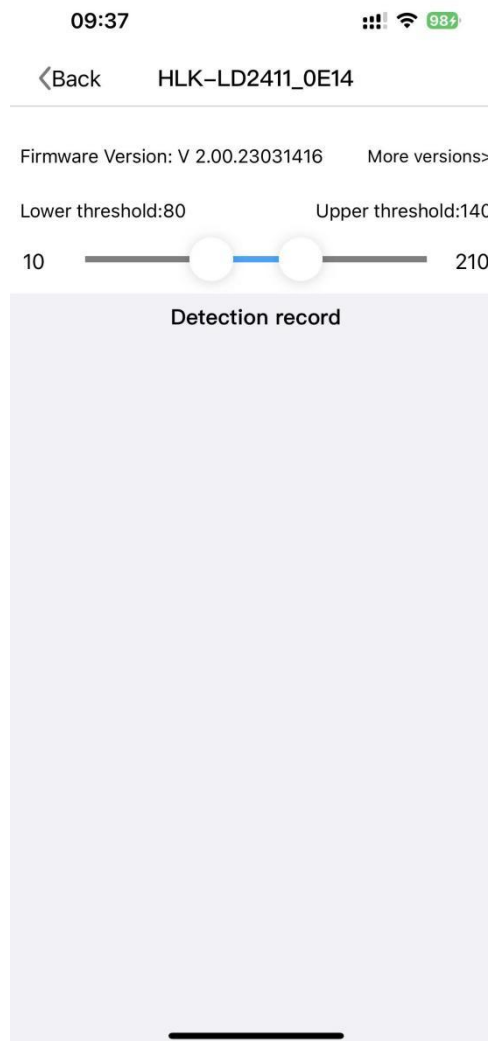

Default distance at upper door limit: 105cm Default distance at lower door limit: 95cm
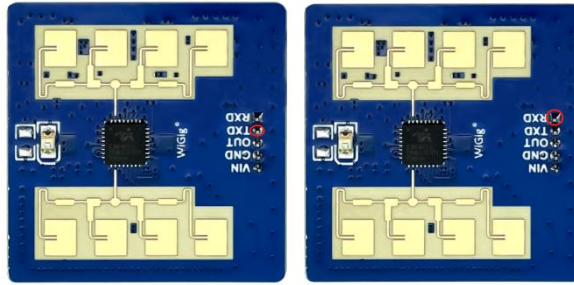
     Once the distance trend is recognized, the module will output level signals via the RX and TX pins to inform the trend

Modification of Threshold Values:

     Threshold values can be changed via the app.
    Note: Maximum upper door limit 210cm, minimum lower door limit 10cm. upper door limit needs to be greater than lower door limit +10cm.

5.Revision of Records

Date	Versions	Modifications
2023- 3- 23	1. 01	First edition

6.Technical Support and Contacts

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